Workshop to Develop a Portfolio of Low Latency Datasets for Time-Sensitive Applications

27-29 September 2016
Langley Research Center, Hampton VA

Time-sensitive remote sensing data are designed to meet the needs of decision makers who can rapidly interpret and integrate the information to guide actions more accurately and consistently. Low latency, or near-real time satellite data, contribute to activities that deliver societal benefits including disaster risk, resilience, food security and sustainable agriculture, water and energy resource management, and ecosystem sustainability. NASA has expertise, research, observational infrastructure and partnerships to capture, process and deliver low-latency data sets, but the extent of these assets are not fully mobilized. By articulating the urgent science-informed decision making enabled by rapid response using low-latency satellite data, NASA and the stakeholder communities will be able to target resources to improve research results, advance application science, optimize data production, and guide technology development.

The goals of the workshop are:

1. Describe and characterize the existing NASA low-latency data portfolio in Earth science;
2. Determine what near real time datasets we could have in the coming decade, what is needed by the community and the process required to provide these datasets;
3. Articulate the key underlying science questions that are answered with low latency remote sensing data; and
4. Articulate the issues and challenges of near-real time data acquisition and management.

Expected Workshop Outcomes:

- *Development of a portfolio for existing NASA NRT datasets and associated data products and infrastructure;*
- *Identification of significant NRT shortfalls and opportunities for research and application science that would improve results; and*
- *Establish a community of practice and stakeholders to continue planning and coordination actions to increase and accelerate the use and utility of NRT data and target resources to address shortfalls and opportunities.*

Tuesday, September 27, 2016 NASA Langley Reid Center Conference Room		
8:00am	**Registration & Check-in**	
	Speaker	**Topic**
9:00am	Molly Brown and/or Diane Davies	Welcome to Workshop Goals and objectives for meeting **Day 1 – focus on data producers**
9:10am	Michael Freilich, NASA ESD (remote presentation)	Charge of the workshop and NASA Earth Science priorities
9:40am	David Green, NASA Applied Science Program, NASA Headquarters	Disasters and the application science need for NRT data

10:00am	Kevin Murphy, NASA Headquarters	The Near Real-Time portfolio concept
10:30am	Chris Justice, UMD, LANCE User Working Group Chair	LANCE NRT data and the role of UWG and key end users
10:50am	Pat Coronado /Kelvin Brentzel, Direct Readout Laboratory, NASA GSFC	Direct Readout Laboratory and their provision of NRT data
11:10am	Coffee break	
11:30am	Will Stefanov, Associate ISS Program Scientist for Earth Observations, NASA JSC	Overview of the Near-Real Time Data Potential of the International Space Station
11:50pm	Alex Fore, JPL	RapidScat
12:00 pm	Don Sullivan and Jay Al-Saadi, NASA	NRT from field campaigns
12.20 pm	Steve Neeck, NASA Headquarters (remote presentation)	NASA HQ perspective on support for NRT data production
12:40pm	Ryan Boller, NASA GSFC	The Common Metadata Repository, the Earthdata Search Client and Worldview: ESDIS tools that could be leveraged towards a NRT Portal.
1:00pm	**Lunch Break**	
Lightning talks of products proposed to be included in LANCE		
2:00pm	Michael Goodman, NASA MSFC	NRT Lightning Imaging Sensor (LIS) from the ISS.
2:10pm	Dan Ziskin, NCAR - Atmospheric Chemistry Observations & Modeling Laboratory	Measurement of Pollution in the Troposphere (MOPITT) NRT.
2:20pm	Molly Brown	Introduction of breakout group topics, objectives and directions
2:30pm	Portfolio development and gap identification for NRT data products, and discussion of NRT science questions. ***Outcomes:*** ➢ Each group should review the NRT portfolio, and discuss the challenges, opportunities, data availability, and data needs for each application area ➢ Each group must ***report at least two conclusions*** from the breakout group in a single PowerPoint slide LANCE user working group in parallel session.	
4:30pm	Reports back from groups (5 minutes each)	***Designated reporter from each group with 1 PowerPoint slide***
5:20pm	Open Discussion	
6:00pm	Molly Brown	***Conclusions, start time on Day 2, and invitation to Social***
6:05pm	***NRT Social and Poster Session at Cafeteria area***	

Wednesday, September 28, 2016		
8:00am	**Coffee, Registration & Check-in**	
	Speaker	**Topic**
8:30am	Molly and/or Diane	Welcome to Day 2 – **Focus on Sectors** Goals and objectives for second day of the meeting. Paired NRT data producers and users in different sectors
8:40am	Lawrence Friedl, NASA HQ	Applications perspectives
9:00am	Brenda Jones, USGS	Hazards Data Distribution System / NRT Landsat
9:20am	Stuart Frye, NASA, GSFC	NRT data for CEOS and GEO
9:40am	Mike Little, NASA GSFC	Advances in technology: improving delivery and accessibility of NASA's NRT data
10:00am	Ana Prados, UMBC	NASA Applied Remote Sensing Training (ASRET): Building Capacity to access and use NASA NRT products
10:10am	Coffee break	
10:40am	Bob Tetrault US-FAS and Chris Justice, UMD/ GEOGlam	Agricultural and Drought Monitoring
10:50am	Brad Zavodsky, NASA SPoRT and Michael Folmer, NWS Weather Prediction Center	Use of Satellite Data within Weather Decision support systems
11:00am	Wilfrid Schroeder, UMD and Brad Quayle USFS RSAC	Fire data and users
11:20am	Dave Winker, NASA LARC and Kim Richardson, NRL	CALIOP- derived NRT aerosols applied in NRL NRT data products
12:40am	Doreen Neil / Jim Szykman, LARC and EPA or NOAA end user	NRT data for global air quality monitoring.
1:00pm	**Lunch Break**	
2:00pm	Ryan Boller, NASA GSFC	NRT Portal
2:20pm	Molly Brown - **Introduction to breakout groups**	
2:30pm	Portfolio development and gap identification for NRT data products ***Outcomes:*** ➢ Each group should review the NRT portfolio, and create a list of data used, data gaps, future data needs, and science questions behind each applications area ➢ Each group must ***report at least two conclusions*** from the breakout group.	
4:30pm	Reports back from groups (5 minutes each)	***Designated reporter from each group with 1 PowerPoint slide***
4:50pm	Open Discussion, Moderated by David Green, NASA HQ	
5:30pm	**Adjourn for the day**	

Thursday, September 29, 2016		
8:00am	**Coffee**	
	Speaker	**Topic**
8:30am	Molly and/or Diane	Welcome to Day 3 – Goals and objectives for third day of the meeting
8:40am	William Blackwell, MIT Lincoln Labs	Cubesats and related technologies and mission opportunities for low latency data
9:00am	Questions and discussion	
9:10am	Christopher Lippitt, University of New Mexico	NRT data and Earth Science priorities
9:30am	Questions and discussion	
10:10am	Coffee break	
10:30am	Molly Brown	Overview of results from breakout groups on days 1 and 2
10:40am	Panel Discussion – objectives are to discuss the scientific, programmatic and practical consequences of the NRT portfolio, and ways we can continue to ensure NRT data is available in the coming decade. Chair: David Green Participants: Sandra Cauffman, Chris Justice, Kevin Murphy, John Kusterer	
12:50pm	David Green	Closing Remarks
1:00pm	**Adjourn**	